
NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

NASA-03900 (June 2004)
NASA
Superseding NASA-03900
(January 2004)

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DIVISION 03 - CONCRETE

SECTION 03900

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06/04

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SECTION 03900

CONCRETE RESTORATION AND CLEANING
06/04

NOTE: Delete, revise, or add to the text in this
section to cover project requirements. Notes are
for designer information and will not appear in the
final project specification.

This section covers cleaning, patching, repairing,
and finishing concrete surfaces.

PART 1 GENERAL

1.1 REFERENCES

ACI INTERNATIONAL (ACI)

ACI 201.1R	(1992) Guide for Making a Condition Survey of Concrete in Service
ACI 224.1R	(1993) Causes, Evaluation, and Repair of Cracks in Concrete Structures
ACI 301	(1999) Specifications for Structural Concrete
ACI 364.1R	(1994) Guide for Evaluation of Concrete Structures Prior to Rehabilitation
ACI 437R	(2003) Strength Evaluation of Existing Concrete Buildings
ACI C-10	(1990) Repair and Rehabilitation of Concrete Structures
ACI C-20	(1992) Repair and Rehabilitation II

ASTM INTERNATIONAL (ASTM)

ASTM C 42/C 42M	(2003) Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C 881/C 881M	(2002) Epoxy-Resin-Base Bonding Systems for Concrete

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01330 SUBMITTAL PROCEDURES, and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.

The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification:

SD-01 Preconstruction Submittals

Records of Existing Conditions shall be submitted by the Contractor in accordance with paragraph entitled, "Existing Conditions," of this section.

SD-03 Product Data

Manufacturer's catalog data shall be submitted in accordance with the paragraph entitled, "Restoration and Cleaning Materials," of this section, and shall include instructions for preparation and application of material.

SD-07 Certificates

A List of Product Installations shall be submitted in accordance with paragraph entitled, "Product Installation," of this section.

Certificates shall be provided for Restoration and Cleaning Materials showing conformance with referenced standards contained in this section.

SD-08 Manufacturer's Instructions

Installation instructions shall be provided showing the manufacturer's recommended method and sequence of installation for the following items:

Surface Preparation
Patching

1.3 EXISTING CONDITIONS

Records of Existing Conditions shall include features of existing structures and facilities adjacent to the jobsite. Commencement of work shall constitute acceptance of existing conditions. Evaluations of the existing conditions shall conform to ACI 201.1R, ACI 224.1R, ACI 364.1R, ACI 301, ACI 437R.

1.4 PRODUCT INSTALLATION

A List of Product Installations shall be provided by the Contractor of the

materials to be used, showing a minimum of at least five successful projects.

PART 2 PRODUCTS

2.1 RESTORATION AND CLEANING MATERIALS

Material shall be as follows or an approved equal.

NOTE: Delete the paragraphs not applicable to the project.

A-H Emery Epoxy Topping as manufactured by Antihydro Company, Newark, NJ

A-H Epoxy Patch No. 122 as manufactured by Antihydro Company, Newark, NJ

Kwik Patch as manufactured by Chem-Masters Corp., Chagrin Falls, OH

Polytops 40, 43, 44, or 46 as manufactured by Chem-Masters Corp., Chagrin Falls, OH

Hytron as manufactured by Chem-Masters Corp., Chagrin Falls, OH

Kemset as manufactured by Chem-Masters Corp., Chagrin Falls, OH

EUCO Firmix Nonshrink Metallic Grout as manufactured by Euclid Chemical Company, Cleveland, OH

EUCO N-S Nonshrink Nonmetallic Grout as manufactured by Euclid Chemical Company, Cleveland, OH

EUCO High-Strength Epoxy Grout as manufactured by Euclid Chemical Company, Cleveland, OH

EUCO Polysulfide Epoxy as manufactured by Euclid Chemical Company, Cleveland, OH

EUCO Polyamide Epoxy as manufactured by Euclid Chemical Company, Cleveland, OH

Tigerbond 306 as manufactured by Garon Products Inc., Edison, NJ

Teflite 400 as manufactured by Garon Products Inc., Edison, NJ

Hy-Speed 500 as manufactured by Garon Products, Inc., Edison, NJ

Supreme Grout as manufactured by Gifford-Hill & Company, Inc., Charlotte, NC

Supreme Plus Grout as manufactured by Gifford-Hill & Company, Inc., Charlotte, NC

EMBECO 636 Grout as manufactured by Master Builders, Los Angeles, CA

EMBECO 201 Grout as manufactured by Master Builders, Los Angeles, CA

Probond ET-180 as manufactured by Protex Industries, Inc., Denver, CO

Probond PC-201D as manufactured by Protex Industries, Inc., Denver, CO

Proflow 30/30XF as manufactured by Protex Industries, Inc., Denver, CO

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Surfaces to be restored shall be cleaned. Cleaning may be by scraping, wire brushing, sand blasting, or other approved method as recommended by the manufacturer of the material to be used. Execution shall conform to ACI C-10.

3.2 TESTING

Testing obtaining and testing of drilled cores shall conform to ASTM C 42/C 42M.

3.3 PATCHING

Holes and cracks shall be filled with a patch, grout, or topping as specified and in accordance with manufacturer's approved printed instructions. Execution shall conform to ACI C-10, ACI C-20, ASTM C 881/C 881M.

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